Sub C1

CLAIMS

1/ A propulsion device comprising an injection chamber for at least one propellant fluid, which chamber is disposed upstream from a gas injection nozzle, the device having an induction loop surrounding a zone of the nozzle to heat the ejected gases, and having a high frequency electricity generator for powering said induction loop.

2/ A device according to claim 1, wherein the nozzle has a diverging region disposed downstream from the induction loop.

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3/ A device according to claim 1, wherein at least one of said fluids receives heat upstream from being injected into said injection chamber from a heat exchanger for cooling the nozzle and/or the injection chamber.

Sub C3

4/ A device according to claim 1, wherein at least one of said propellant fluids feeds at least a first heat exchanger for cooling the electricity generator.

5/ A device according to claim 1, wherein the injection chamber has a first inlet for a first propellant fluid, and a second inlet for a second propellant fluid which enters into the injection chamber and reacts chemically to produce heat.

Sub C4

6/ A device according to claim 5, having a nuclear core which constitutes a heat source for a heat engine which is coupled to the electricity generator, and wherein at least one of said propellant fluids is supplied in cryogenic form and passes through at least a second heat exchanger to constitute a heat sink for the heat engine.

7/ A device according to claim 6, wherein at least one of said propellant fluids feeds at least a third heat

exchanger which is heated by said nuclear core and which is disposed downstream from said second heat exchanger.

8/ A device according to claim 6, wherein the heat engine drives at least one pump for circulating and pressurizing at least one of said propellant fluids.

9/ A device according to claim 6, wherein the heat engine is of the closed circuit type having a working fluid, which fluid is compressed by a compressor and which causes a turbine to rotate which drives the electricity generator, with a heat sink constituted by said first and/or second propellant fluids, and with a heat source which is constituted by the nuclear core.

10/ A device according to claim 5, comprising a nuclear core, a compressor, and a turbine which drives at least the compressor and said electricity generator, and wherein said first fluid, supplied in cryogenic form, is directed through a circuit comprising the following in succession from upstream to downstream:

a) said compressor where it is compressed;
b) the nuclear core where it is heated;
c) the turbine in order to drive it;
d) the nuclear core again where it is heated; and
e) the first inlet of the injection chamber.

11/ A device according to claim 1, wherein the injection chamber has a single inlet for a propellant fluid in gaseous form, in particular hydrogen.

12/ A device according to claim 11, comprising a heat engine of the closed circuit type with a working fluid which is compressed by a compressor and which causes a turbine to rotate which drives an electricity generator, with a heat sink which is constituted by said working

fluid, and with a heat source which is constituted by a nuclear core.

13/ A device according to claim 11, comprising a nuclear core, a compressor, and a turbine which drives at least the compressor and an electricity generator, and wherein the propellant fluid, supplied in cryogenic form, is directed through a circuit comprising the following in succession from upstream to downstream:

a') said compressor where it is compressed;

b') the nuclear core where it is heated;

c') the turbine in order to drive it;

d') the nuclear core again where it is heated; and

e') said inlet of the injection chamber.